Fig. 1

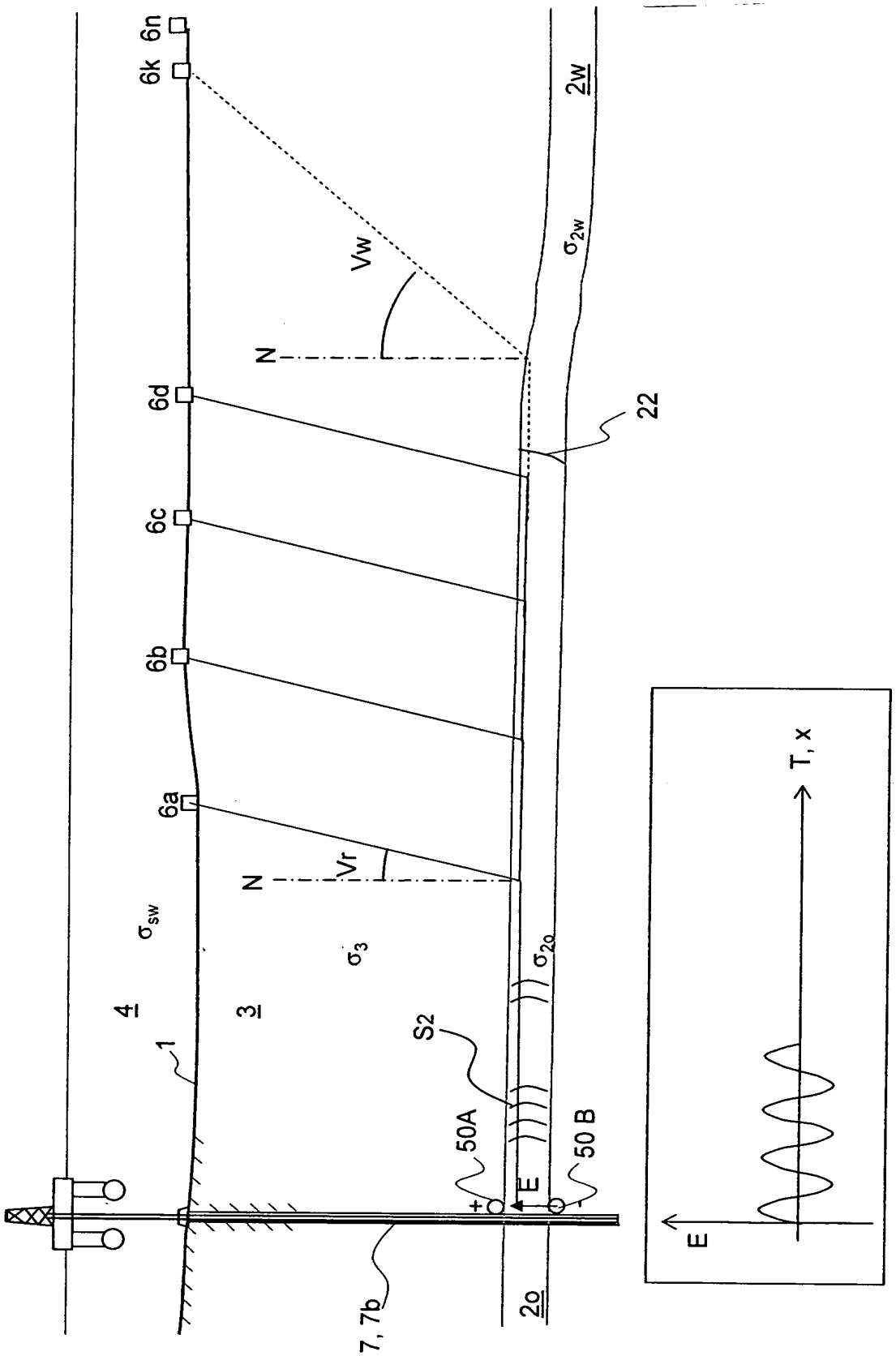

6n
6k
6d
6c
6b
6a
Vw
N
Vr
N
2w
σ_{2w}
22
σ_{sw}
σ_3
σ_{2o}
4
3
1
S2
50A
50 B
E
+
-
7, 7b
2o
T, x
E

Fig. 2

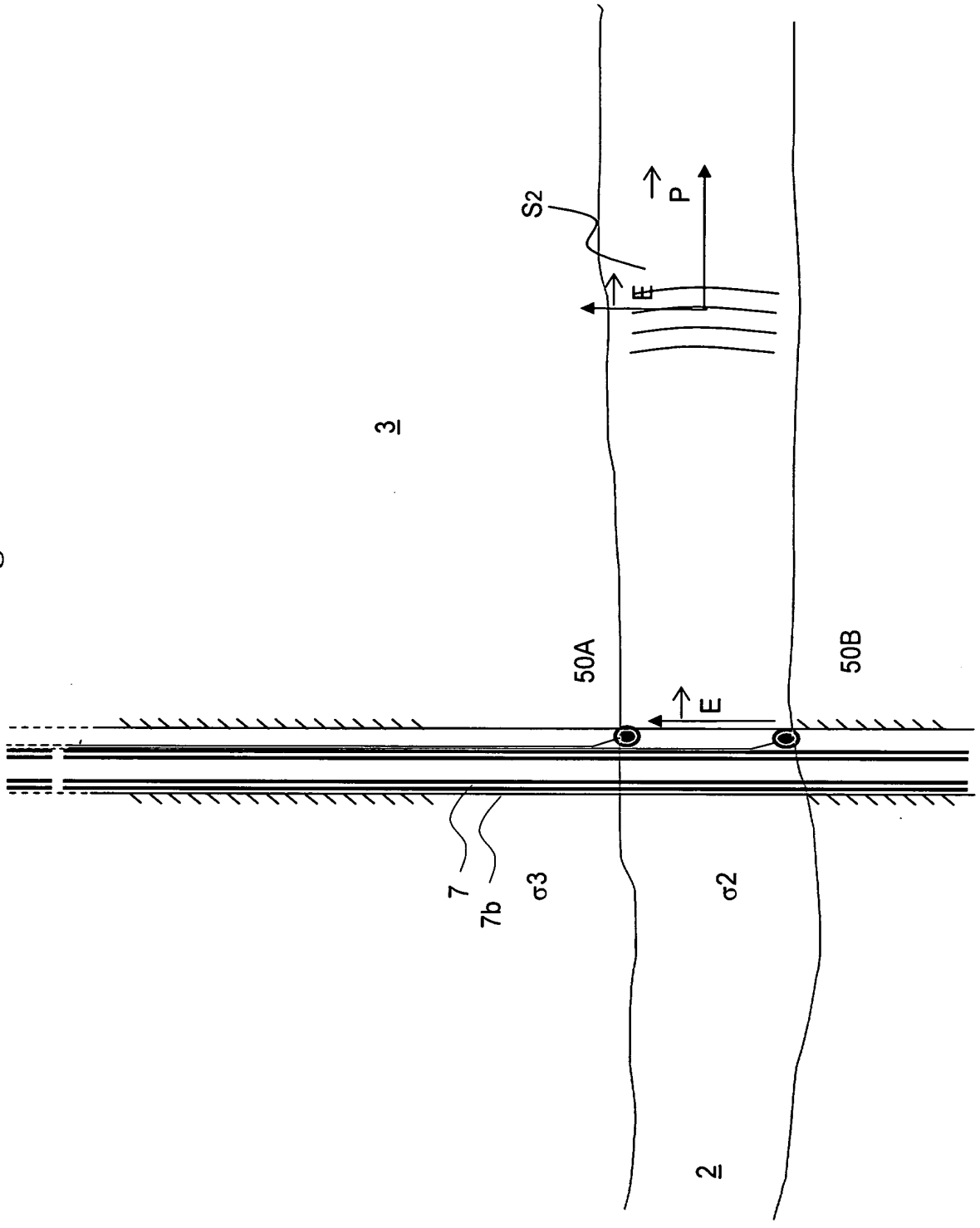
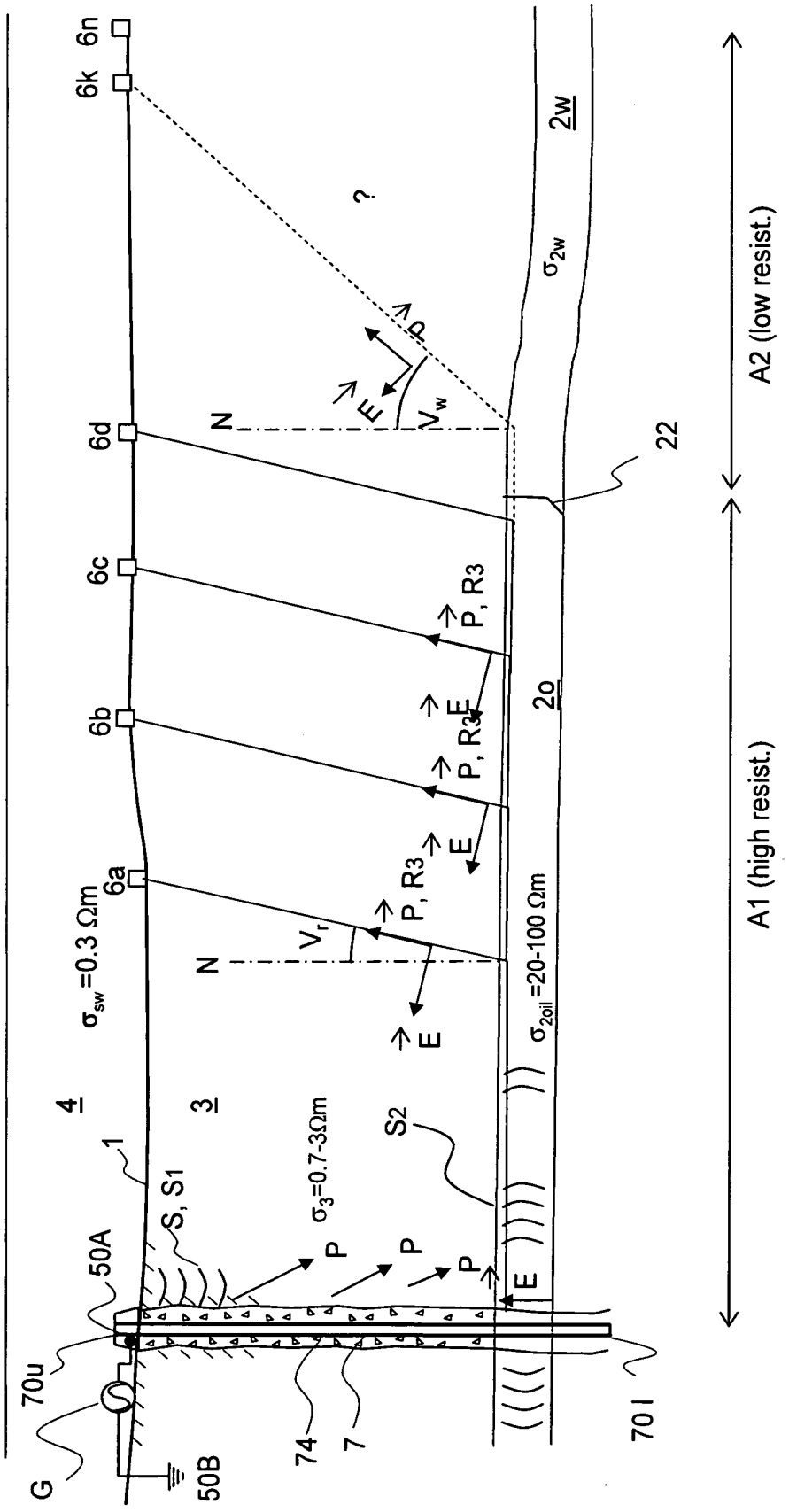


Fig. 3a


6n
6k
6d
6c
6b
6a
N
?
V_w
V_r
P, R3
E
σ_{sw}=0.3 Ωm
σ_{2oil}=20-100 Ωm
σ_{2w}
2w
2o
22
4
3
1
S, S1
S2
σ_3=0.7-3Ωm
P
50A
70u
G
50B
74
7
70 l
A2 (low resist.)
A1 (high resist.)

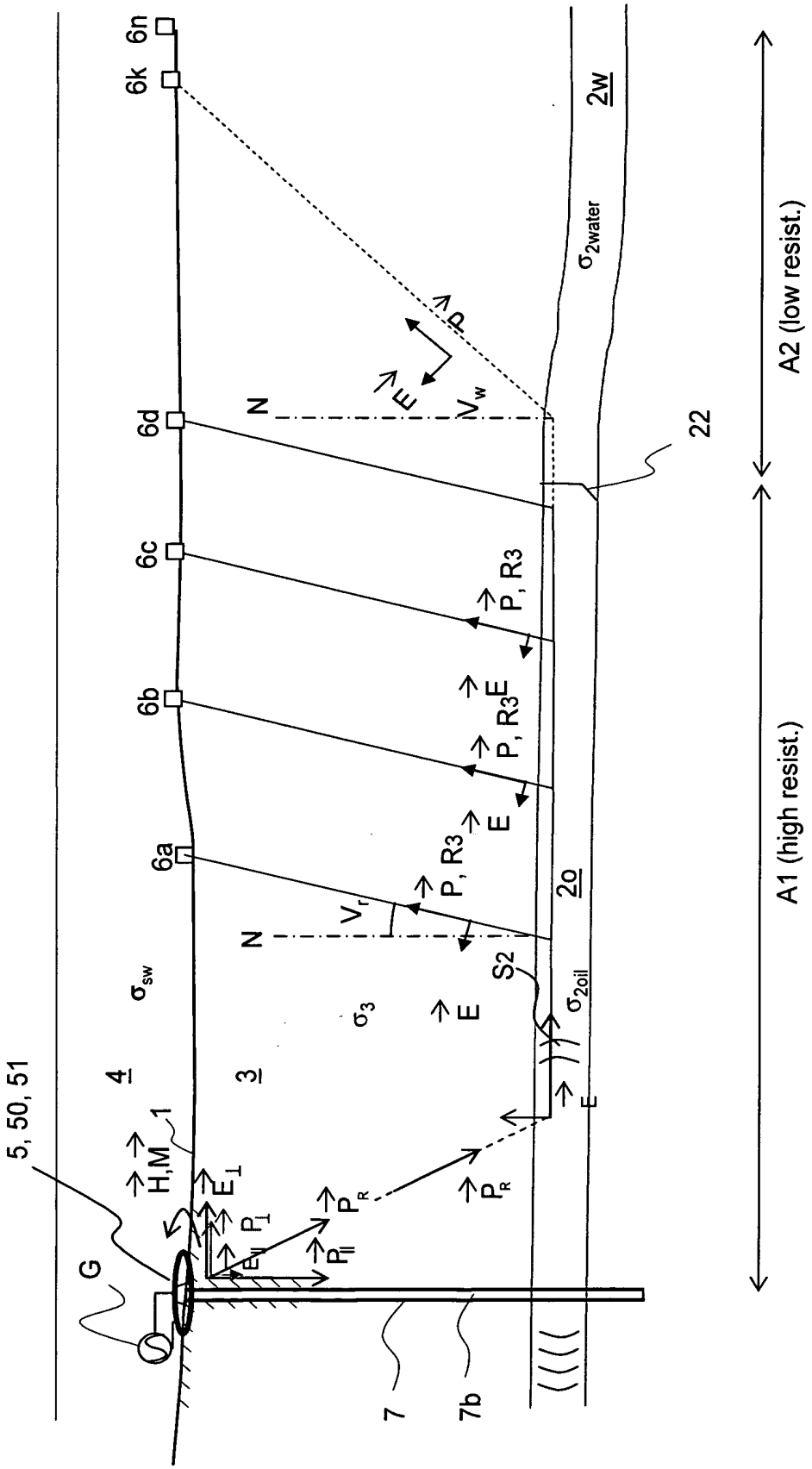
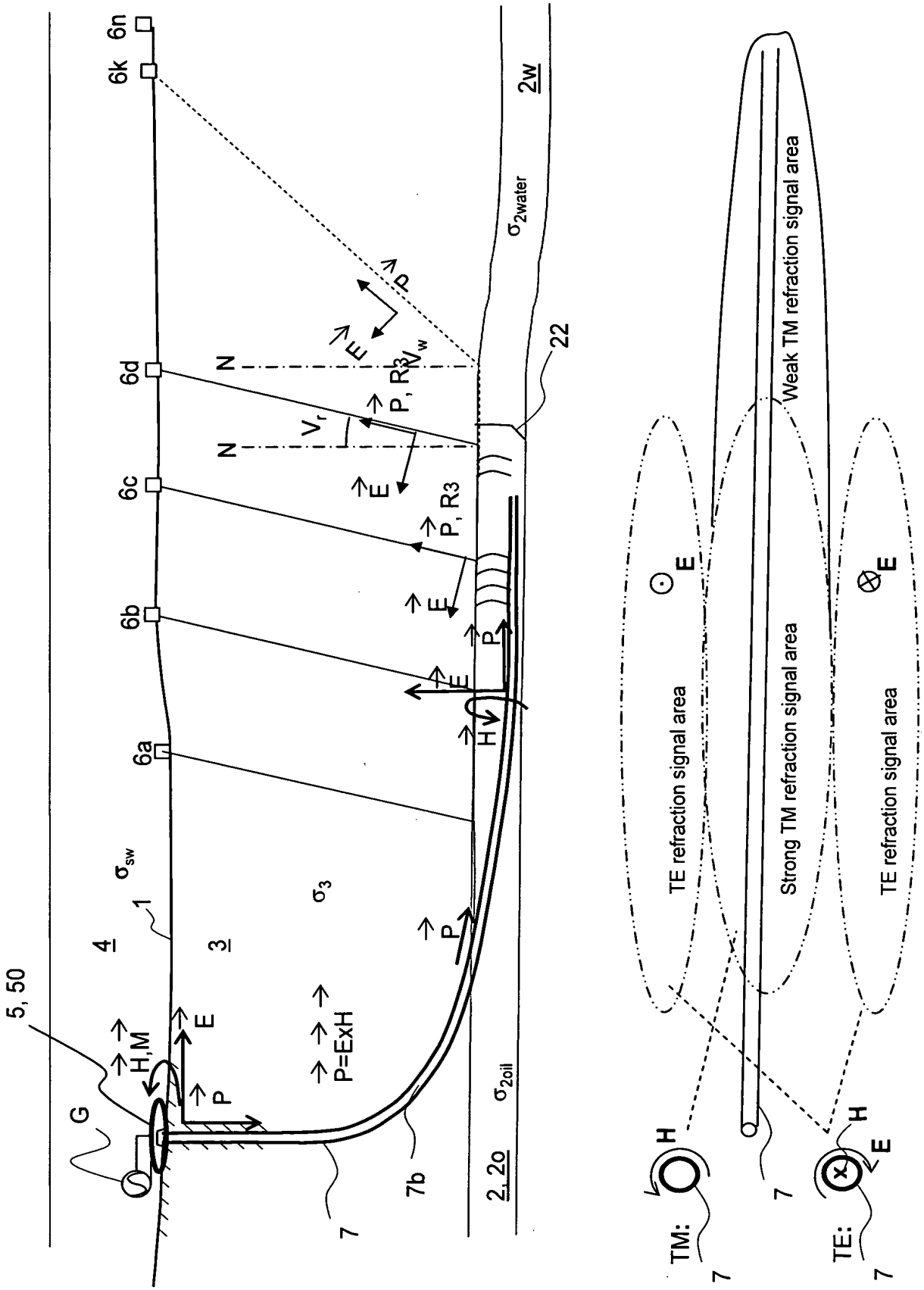

6n
6k
6d
6c
6b
6a
2w
σ_{2water}
22
A2 (low resist.)
A1 (high resist.)
N
V_w
V_r
P, R3
E
σ_{sw}
σ_3
σ_{2oil}
S2
2o
4
3
5, 50, 51
H,M
1
$E_\perp$
$P_\perp$
$E_\parallel$
$P_\parallel$
P_R
G
7
7b

Fig. 3b

Fig. 3c


6n
6k
6d
6c
6b
6a
2w
22
σ2water
σsw
σ3
σ2oil
1
4
3
2, 2o
5, 50
G
H,M
E
P
P=ExH
H
7
7b
N
Vr
Vw
R3
TE refraction signal area
Strong TM refraction signal area
Weak TM refraction signal area
TM:
TE:

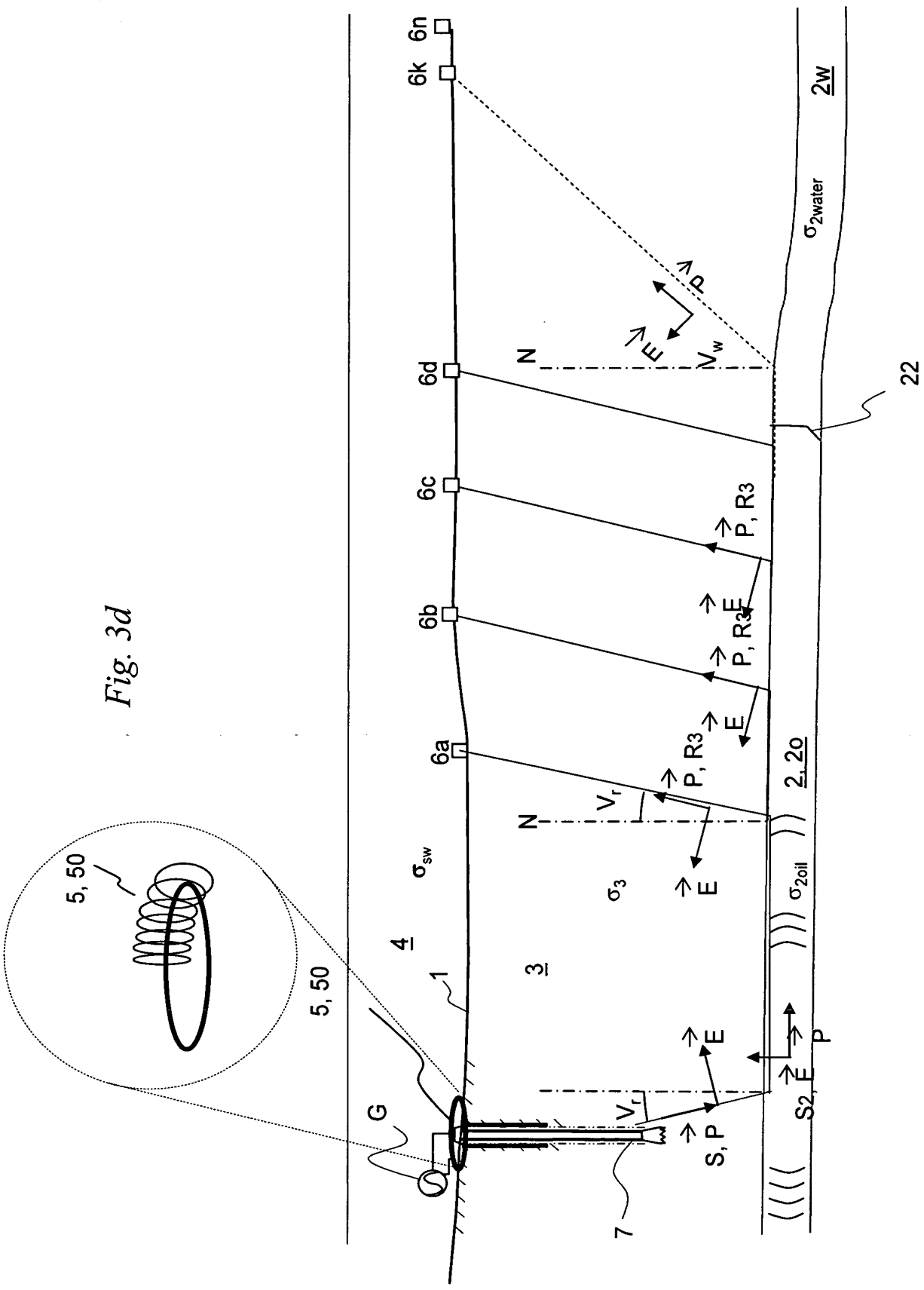
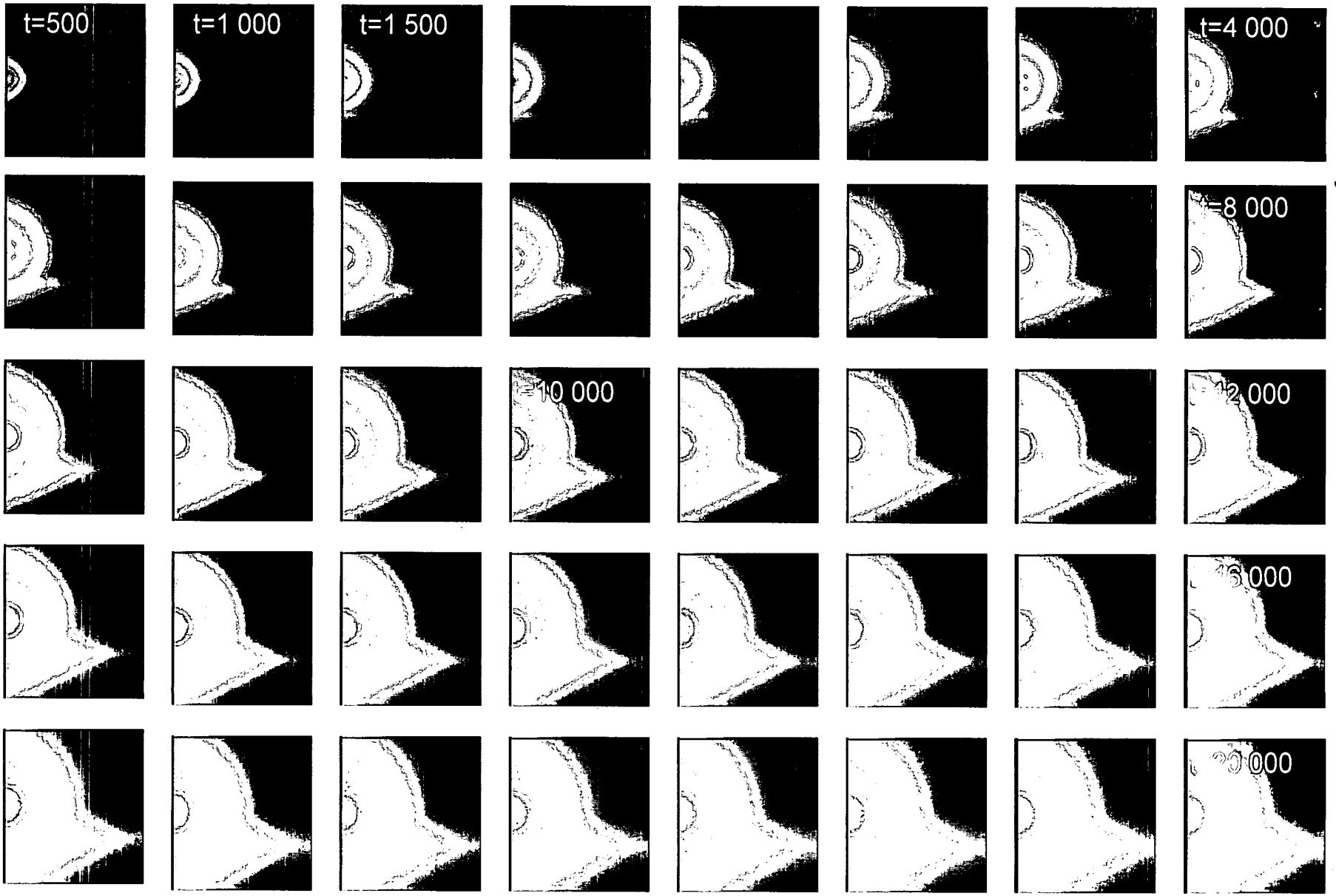

5, 50
5, 50
G
4
1
3
σ_{sw}
σ_3
σ_{2oil}
σ_{2water}
2w
2, 2o
6n
6k
6d
6c
6b
6a
N
V_r
V_w
P
E
P, R3
S, P
S2, E
7
22

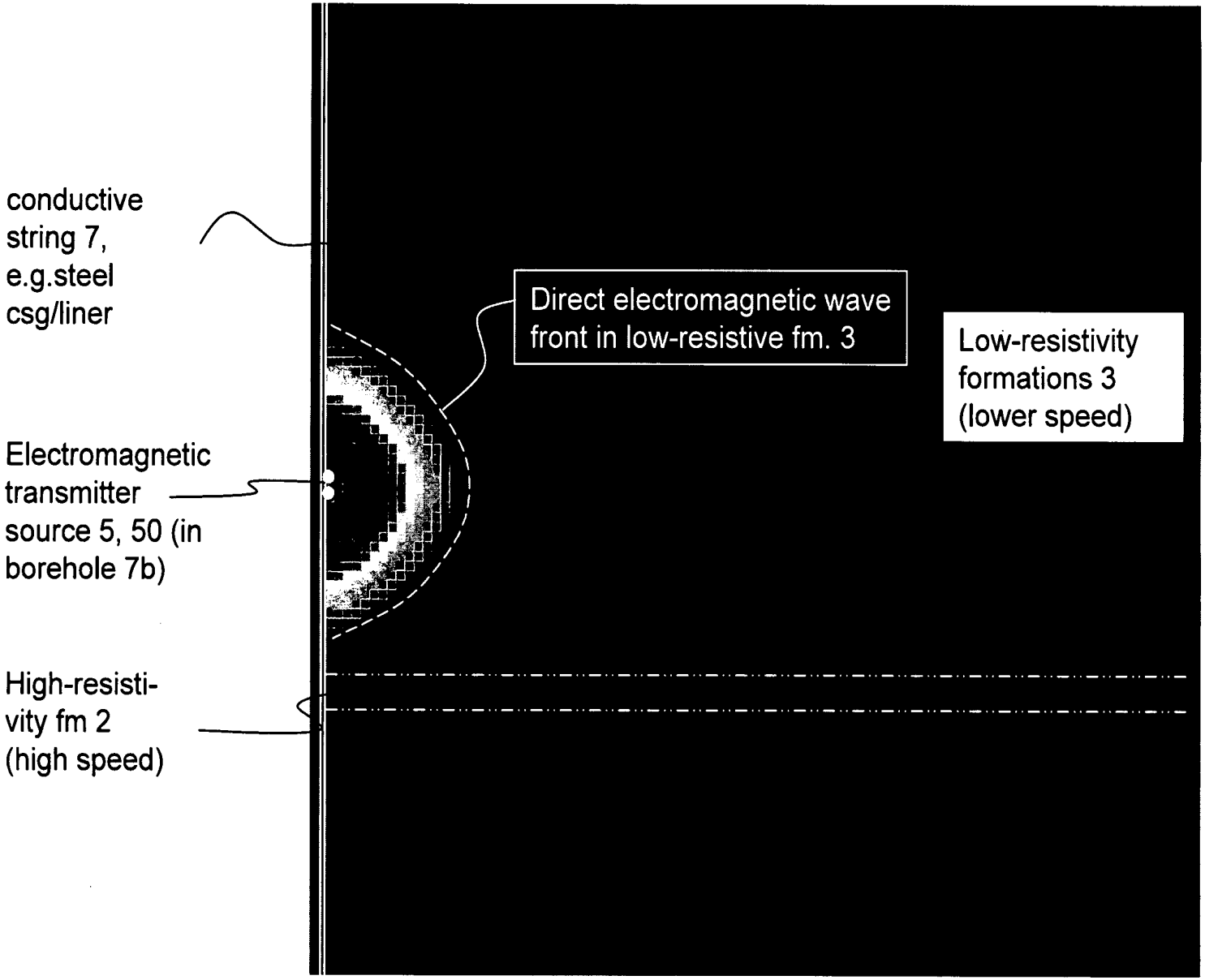
Fig. 3d



EM wave propagation from 500 to 20000 microseconds.
Time increment 500 microsec,

Fig. 4

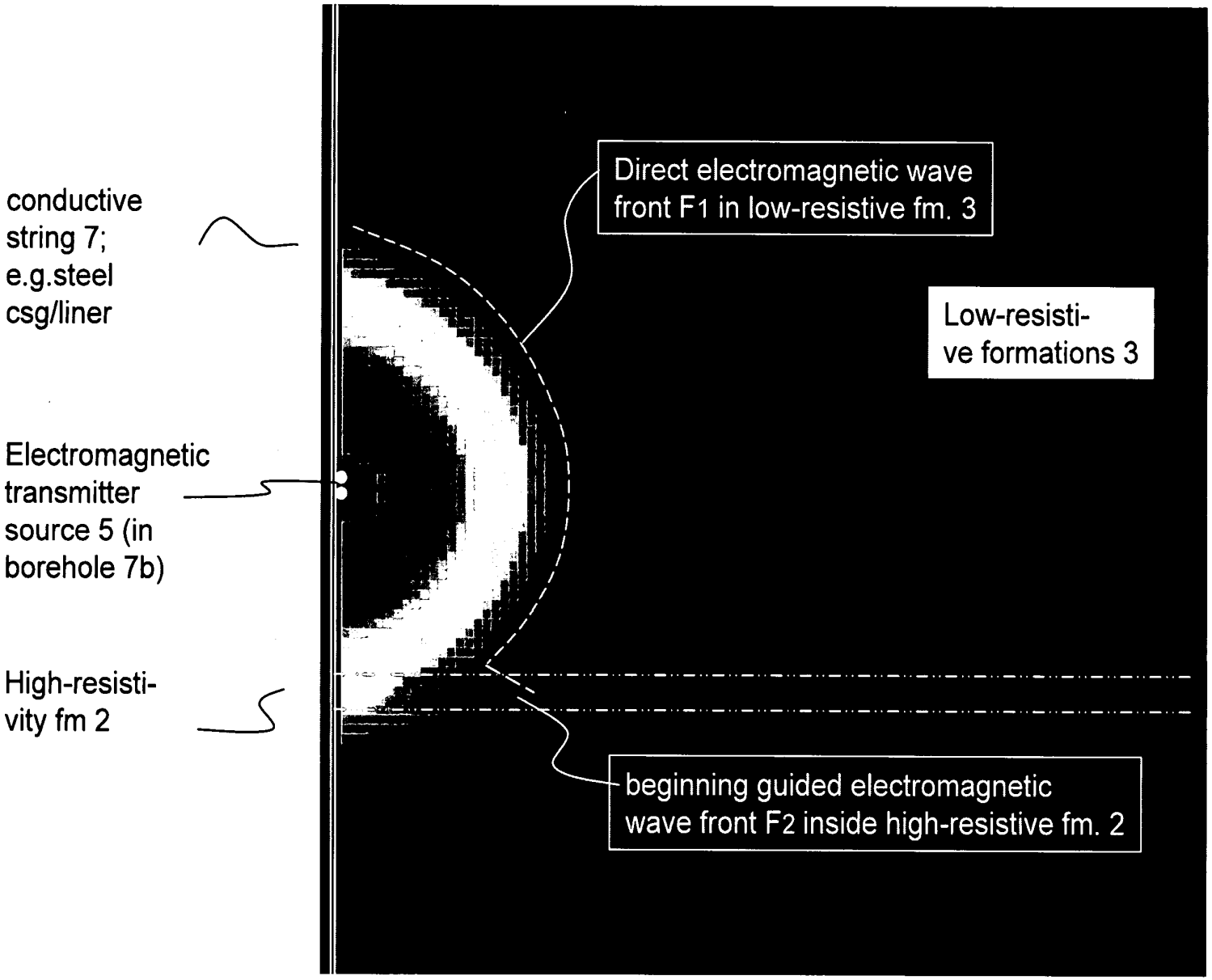
"REPLACEMENT SHEET"



Electromagnetic signal propagated 500 microseconds

Fig. 5

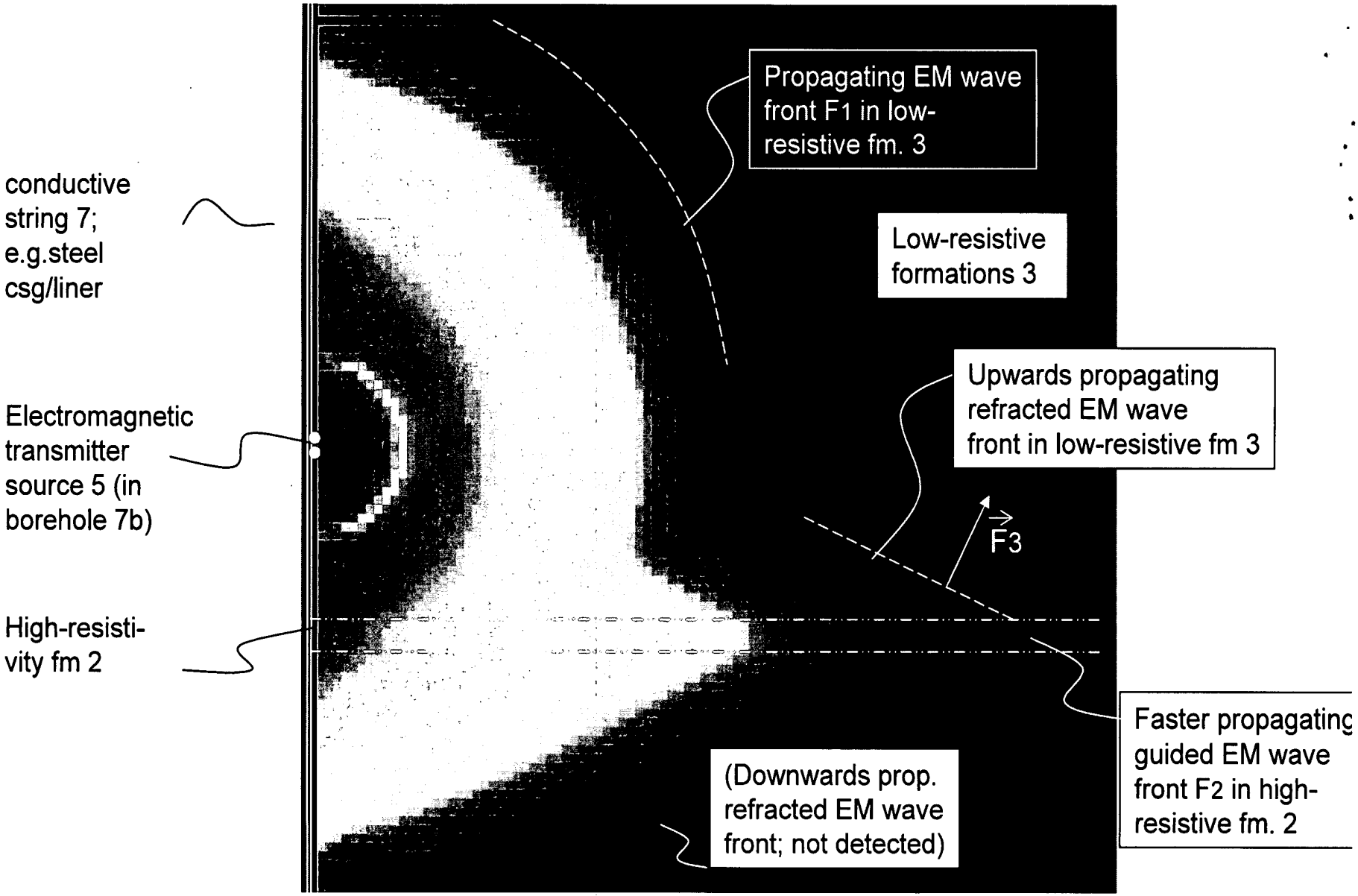
"REPLACEMENT SHEET"



Electromagnetic signal propagated 2 000 microseconds

Fig. 6

"REPLACEMENT SHEET"



Electromagnetic signal propagated 10 000 microseconds

Fig. 7

"REPLACEMENT SHEET"

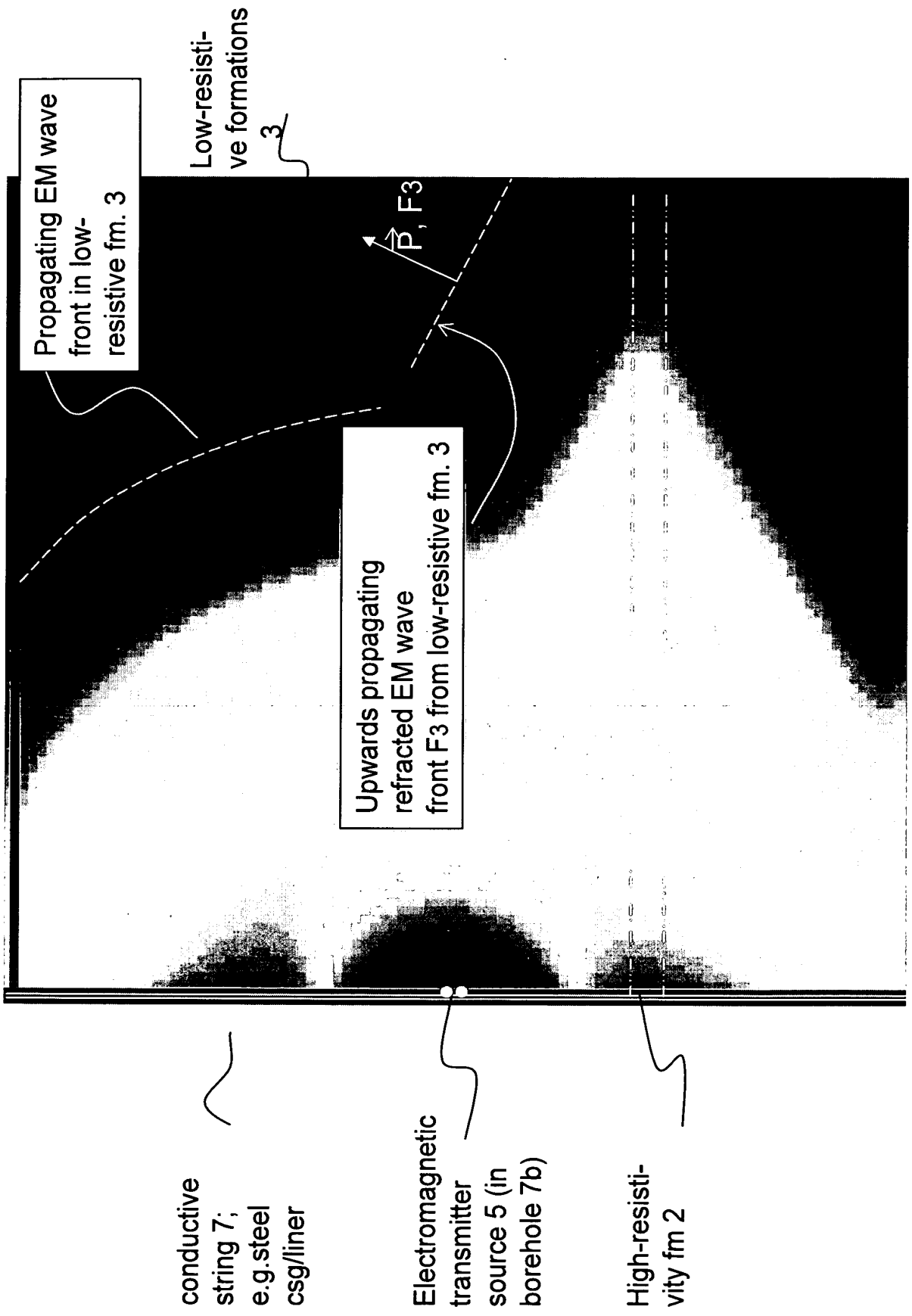
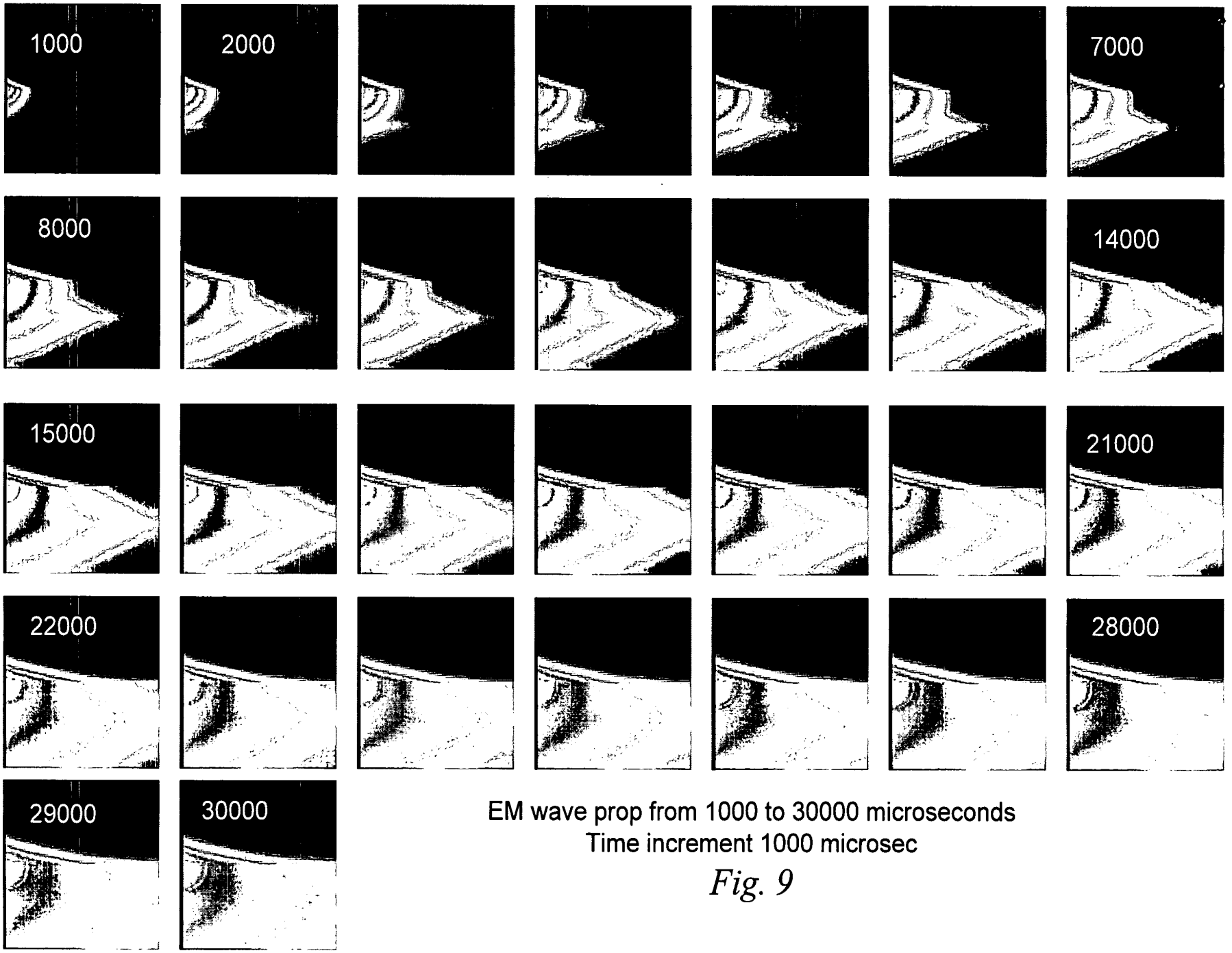

Propagating EM wave front in low-resistive fm. 3
Low-resisti-ve formations 3
P, F3
Upwards propagating refracted EM wave front F3 from low-resistive fm. 3
conductive string 7; e.g.steel csg/liner
Electromagnetic transmitter source 5 (in borehole 7b)
High-resisti-vity fm 2
Electromagnetic signal propagated 20 000 microseconds

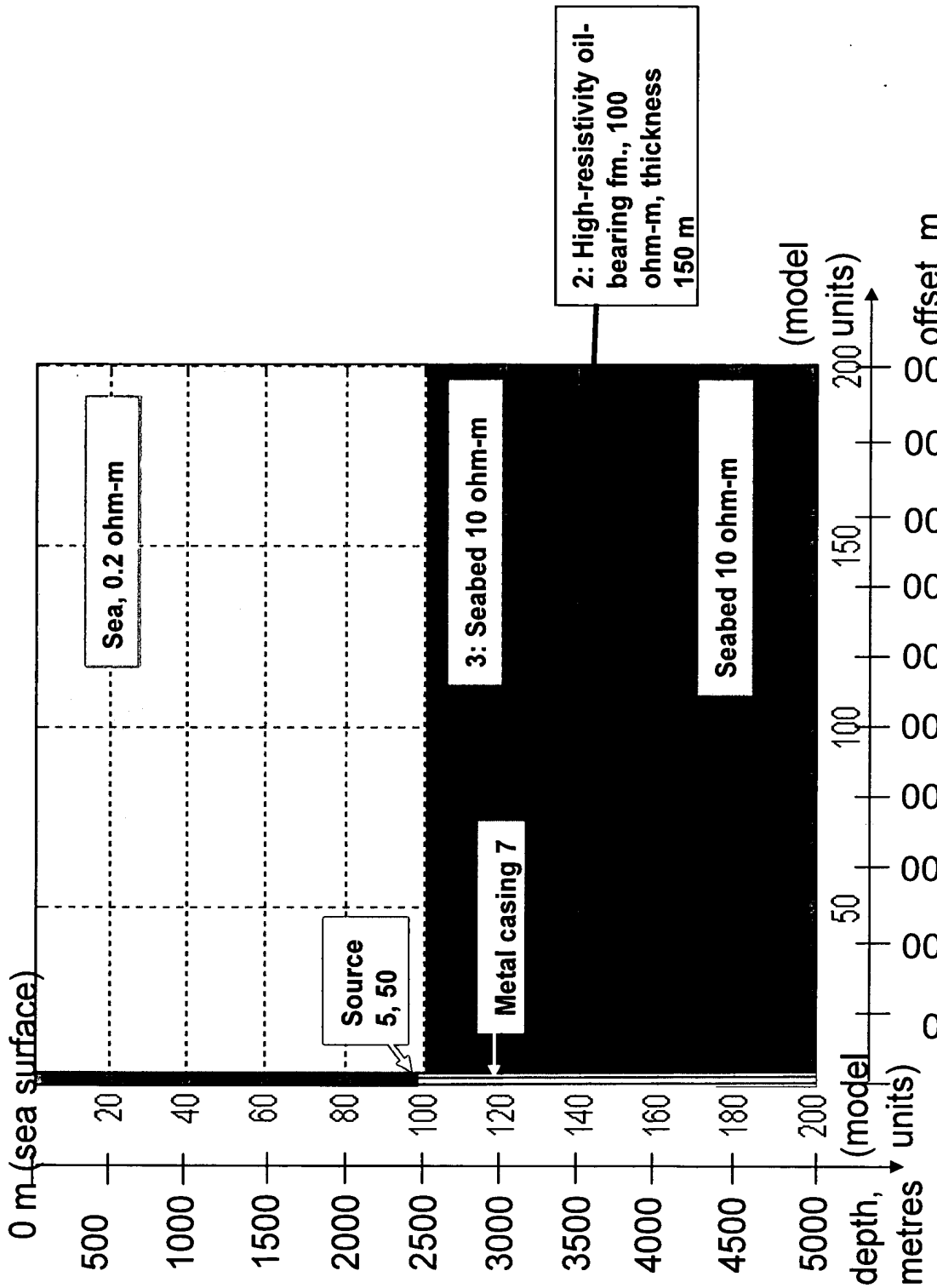
Fig. 8



EM wave prop from 1000 to 30000 microseconds
Time increment 1000 microsec

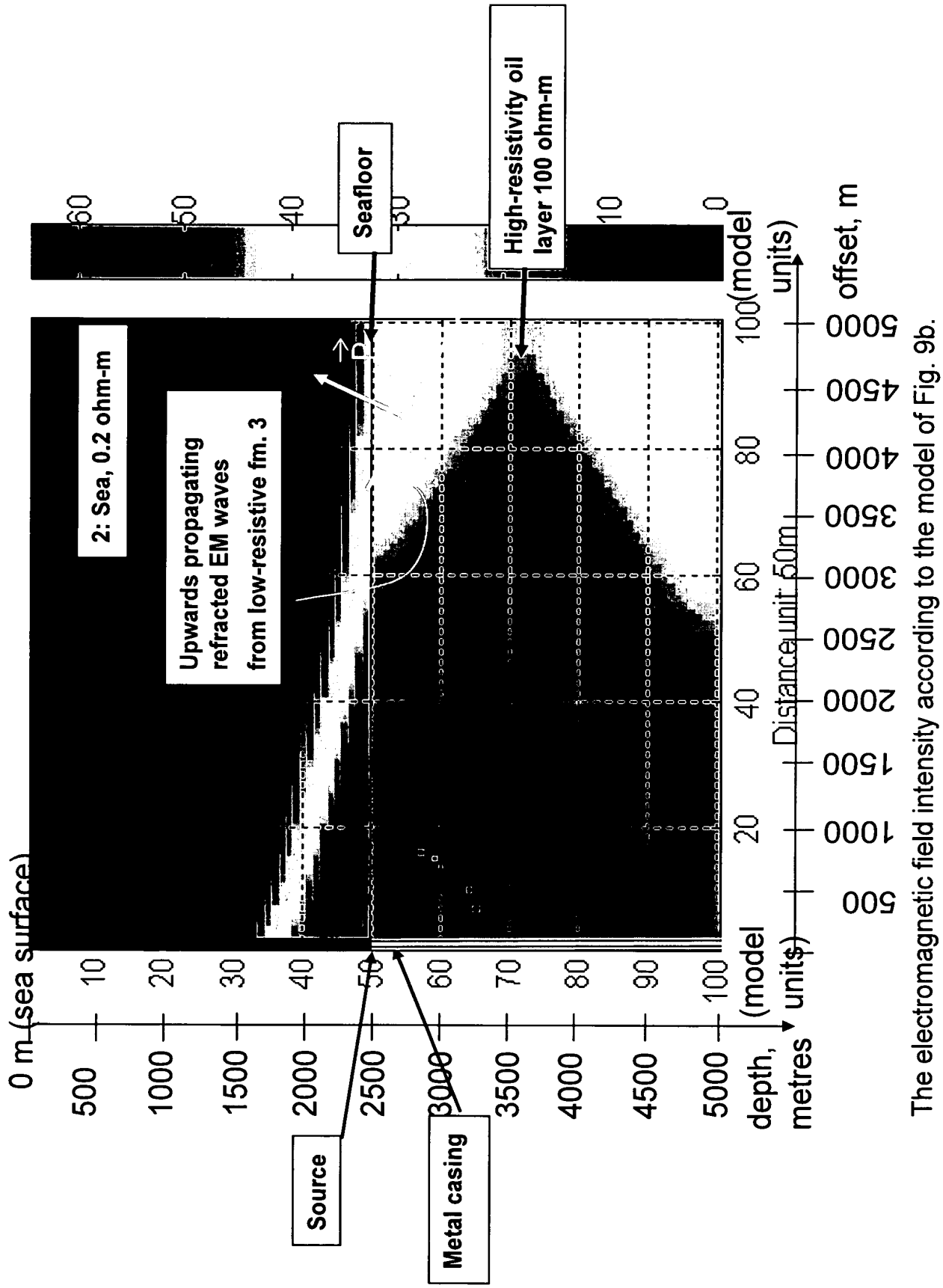
Fig. 9

"REPLACEMENT SHEET"



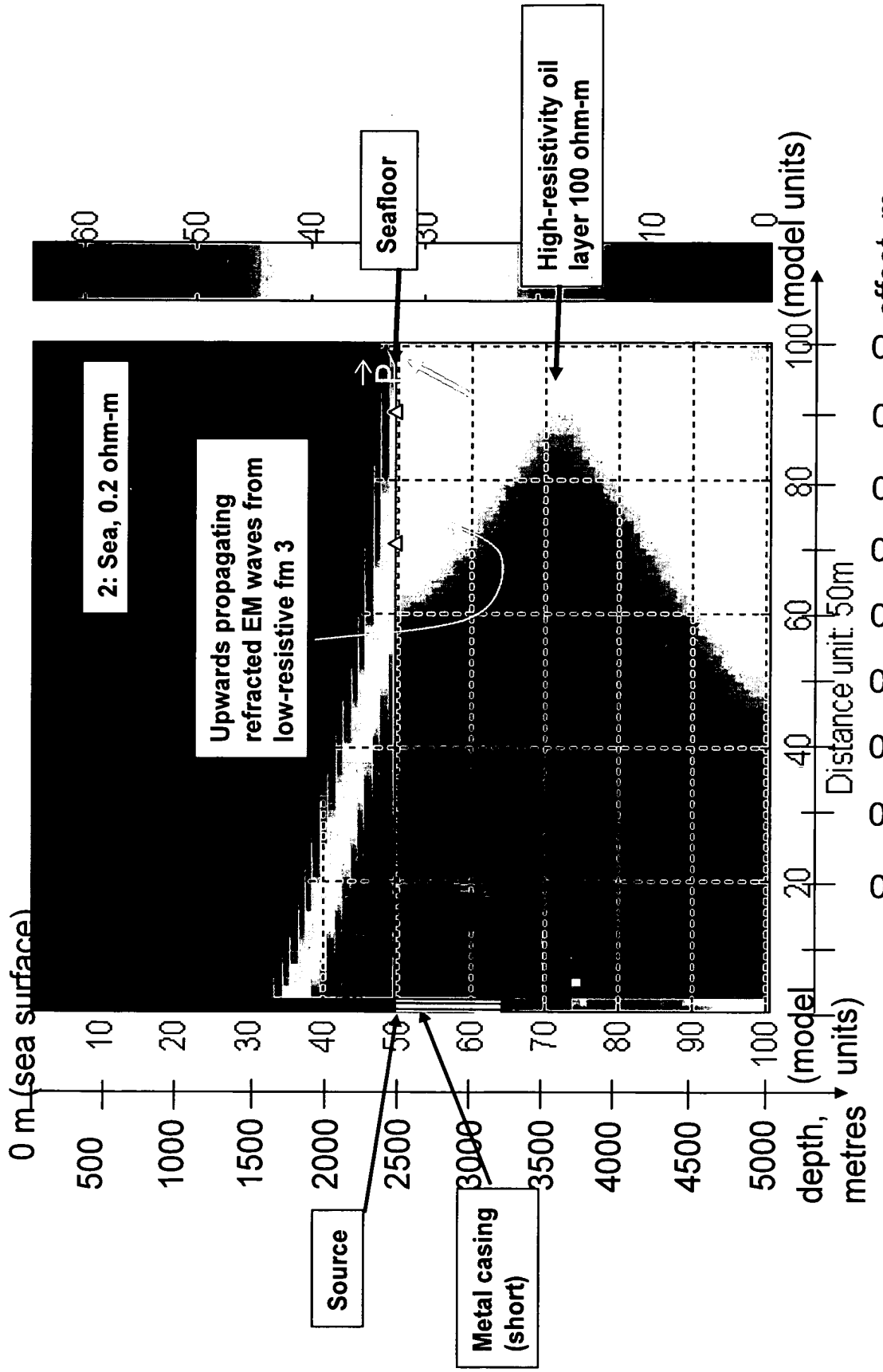
The material model of Fig. 9, indicating a metal casing extending from the seafloor at 2500 m to a total depth of 5000 m into the rocks, with an EM transmitter source on the casing at the seafloor. A high-resistivity oil-bearing rock layer is indicated.

Fig. 9b



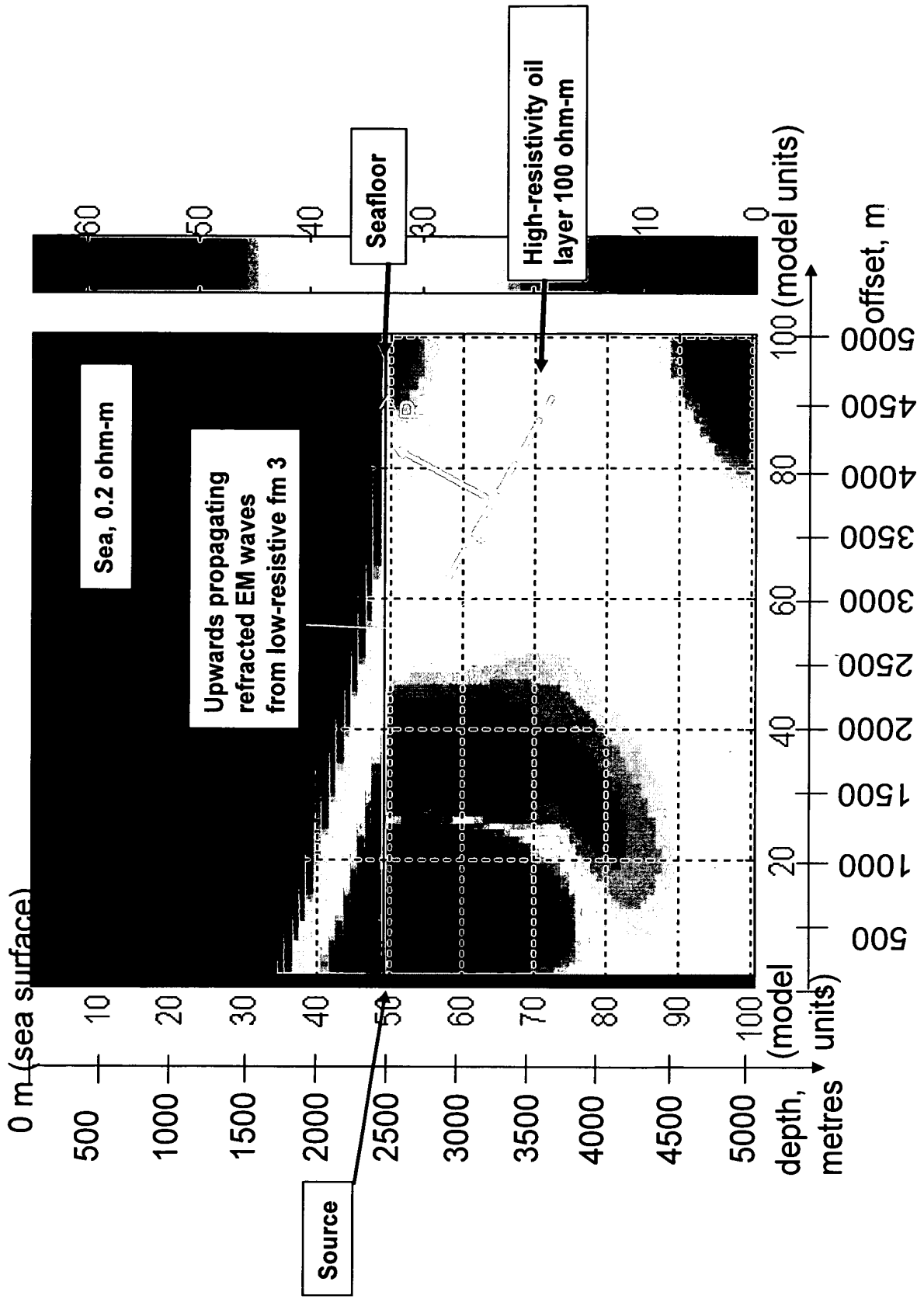
The electromagnetic field intensity according to the model of Fig. 9b.
T= 30 000 microseconds.

Fig. 10



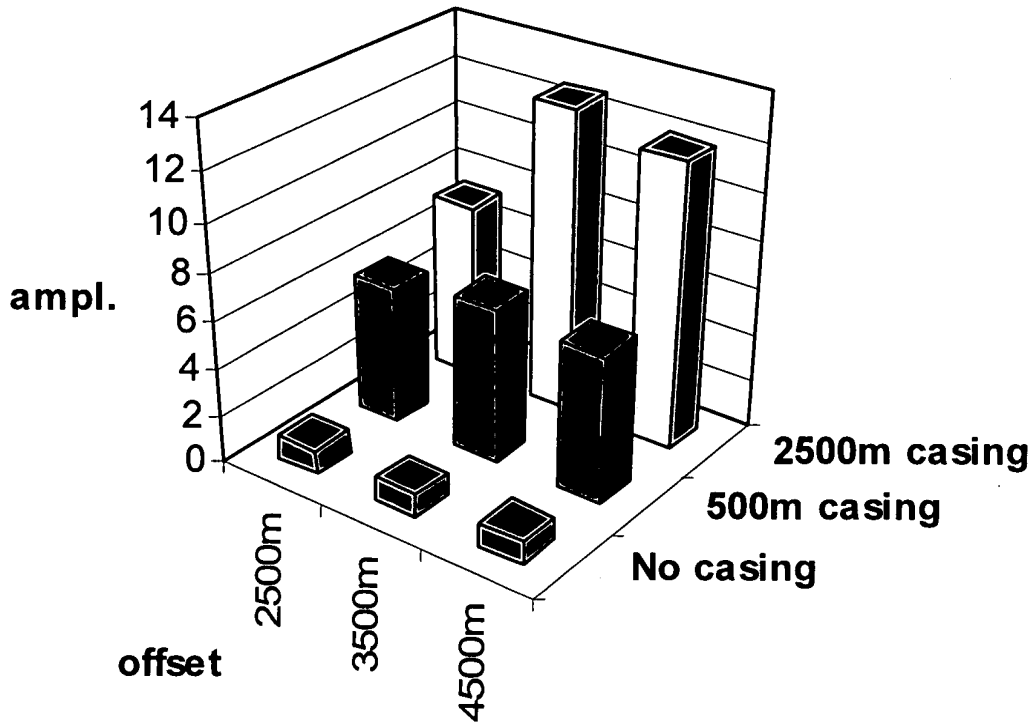
The electromagnetic field intensity according to the model of Fig. 9b, except for a short casing that stops at 3000 m depth below sea surface, or 500 m below seafloor. T= 30 000 microseconds.

Fig. 11



The electromagnetic field intensity according to the model of Fig. 9b, except there being no casing at all in the well. T= 30 000 microseconds.

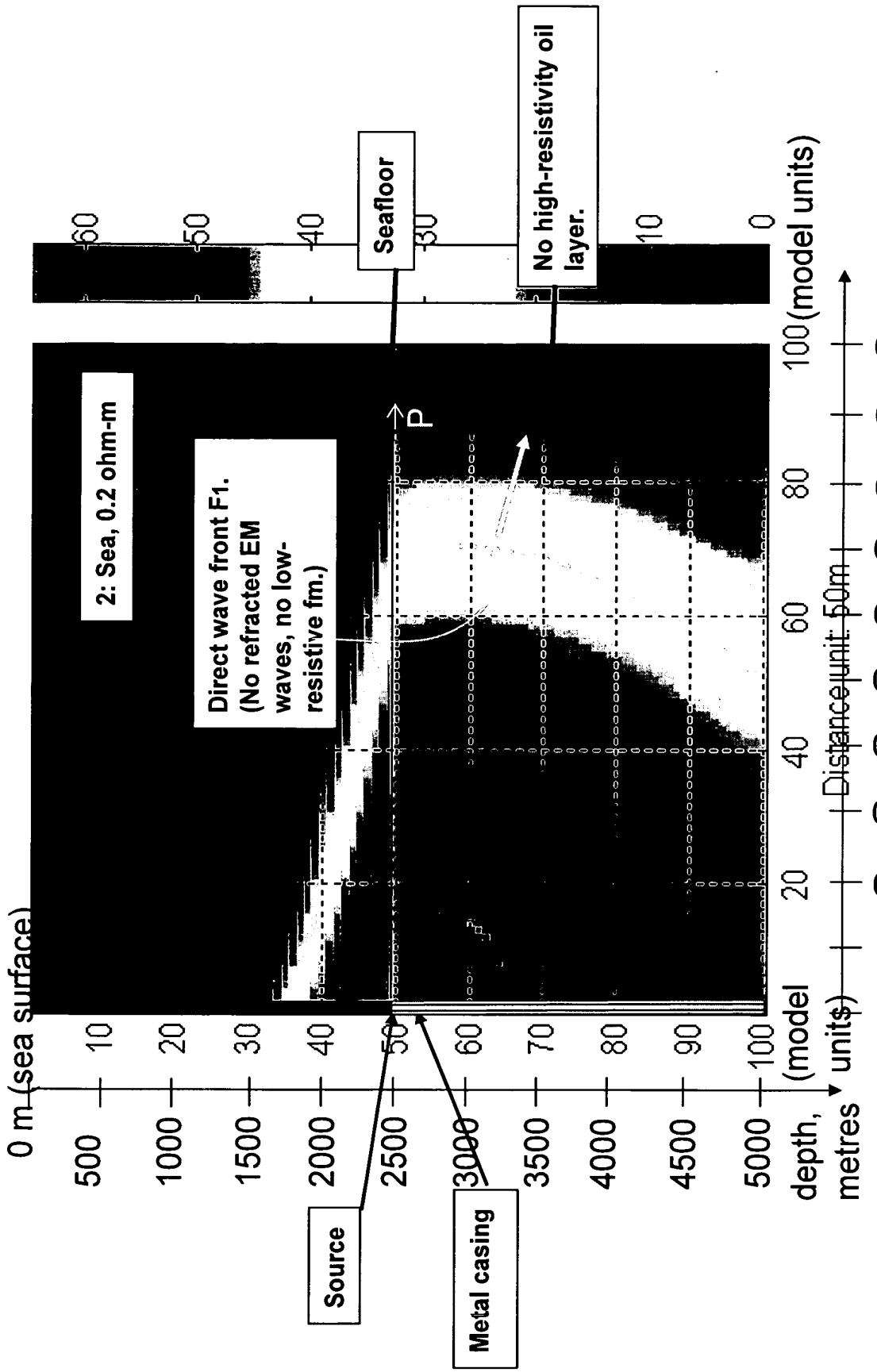
Fig. 12



A comparison between amplitudes as measured at the seabed in the imagined situations of having no casing, a short casing and a long casing.

Fig. 13

"REPLACEMENT SHEET"



The electromagnetic field intensity according to the model of Fig. 9b, except there being no high resistivity layer.
T= 30 000 microseconds.

Fig. 14